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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,453

10/07/2005

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Q90153

2372

65565 7590 01/14/2010
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EXAMINER

DAGER, JONATHAN M

ART UNIT

PAPER NUMBER

3663

NOTIFICATION DATE

DELIVERY MODE

01/14/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/552,453	Applicant(s) NAGASAWA ET AL.	
	Examiner JONATHAN M. DAGER	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 October 2009 has been entered.

Response to Arguments

2. Applicant's arguments, see pages 6-9 filed 28 October 2009, with respect to the rejection of claim 1 under 35 U.S.C. 102(b) have been fully considered and are persuasive due to amendment. Therefore, the rejection of claim 1 under 35 U.S.C. 102(b) has been withdrawn.

Subsequently, the prior art rejections of all claims dependent therefrom are withdrawn.

However, upon further consideration, new grounds of rejection are warranted (see below).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oniishi (US 5,859,845), and further in view of Lesesky (US 2002/0060625).

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Regarding claims 1, 3, 5, and 11, Oniishi discloses a vehicle load control system suitable for use in controlling electric power fed to lamps and motors aboard a vehicle (column 1 lines 6-7).

The load control invention comprises a control section which has a plurality of control switches and generates a control signal corresponding to the actuation of each of the control switches, a multiplex processing section which multiplexes the control signal received from the control section and sends the thus multiplexed control signal to a multiplex transmission line, and load control sections which receive the multiplexed control signal sent over the multiplex transmission line and control the electric power fed to a corresponding one of loads on the basis of the thus received control signal (column 2 lines 58-67, column 3 line 1).

Thus, Oniishi has disclosed an invention configured to control the load electrical parts in the front of the vehicle (lights, motors, etc.), a control unit receiving a control signal for controlling the drive of the load electrical part through a main bus line of the vehicle, as well as a drive control unit which is connected to the controller through another bus line, wherein the signal is converted into a drive signal for the load electrical part.

Oniishi also discloses that the mounting position for the invention for the front electrical control unit is mounted next to the driver's seat (column 9 lines 10-12). Thus, the invention is located in the front portion of the vehicle.

Oniishi also discloses that the multiplex communication system employs a centralized control communications protocol which uses the load drive unit A 20 as the master node. The structure of characters of the data comprises one start bit, eight data bits, one parity bit (even), and one stop bit, as shown in FIG. 26. In the drawing, Tc designates a character time. The frame

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of the data comprises a header, the data (eight bytes), and BCC (block check characters = a checksum), as shown in FIG. 32A. A predetermined interval period T_{ci} is ensured between the characters. In the header, a frame number is made up of B0-B3, as shown in FIG. 27B. A transmission unit ID code is made up of B4 and B5, as shown in FIG. 27C. A communication mode ID code is made up of B6 and B7, as shown in FIG. 27D (column 15 lines 66-67, column 16 lines 1-12).

Fig. 1 details a basic block diagram of the load control system. The SW unit 10 is connected to a control section 11. The control section 11 comprises a plurality of switches 11.sub.1 -11.sub.n arranged in a control panel (not shown), and light sources 12 for illumination purposes which are incorporated in the respective control switches for illuminating the surface of the control switch, and a light source 12 for use with an indicator which indicates operating conditions. The control section 11 generates a control signal corresponding to the actuation of each control switch. The SW unit 10 comprises a control section 10b which receives the control signal from the control section 11, being made up of the control switches 11.sub.1 -11.sub.n and connected to the SW unit 10, through an input interface (I/F) 10a, and nonvolatile memory 10g which is connected to the control section 10b and is made up of E.sup.2 PROM holding various data as will be described later (column 7 lines 6-19)

The control section 10b converts the received control signal into control data and generates a transmission frame by collecting a plurality of thus converted control data items. The control section 10b sends the transmission frame to the load drive units A 20 and B 30 through the communication interface (I/F) 10c and the multiplex transmission line 40. Further, the control section 10b outputs a drive signal to a drive section 10e consisting of switching means

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(not shown) through an output interface (I/F) 10d. Upon receipt of the drive signal, the drive section 10e is activated so as to control the illumination of the light sources 12 respectively provided in the control switches by selectively feeding the light sources the electric power from a power supply 10f. The power supply 10f is supplied with the electric power fed from the battery 50 through the power line 60b. The power supply 10f also feeds operating power to the input I/F 10a, the control section 10b, and the output I/F 10d.

The load drive unit A 20 is connected to a first electrical equipment group mounted on the body of the motorbus, that is, loads 21.sub.1 -21.sub.n. Further, the load drive unit A 20 is provided with a control section 20b which is connected to the SW unit 10 via the multiplex transmission line 40. The control section 20b receives the control data from the SW unit 10 by way of a communications interface (I/F) 20a. The control section 20b sends a drive signal based on the received control data to a drive section 20d, consisting of unillustrated switching means, by way of an output interface (I/F) 20c. The drive section 20d is activated by the received drive signal so as to drive an associated load by selectively feeding the electric power received from a power supply 20e to the load. The power supply 20e is supplied with the electric power fed from the battery 50 through the power line 60a. The power line 60a led into the load drive unit A 20 is divided into power lines 60b and 60c. The load drive unit A 20 is provided with a fuse F and a fusible link FL which respectively connect the power line 60a with the power lines 60b and 60c (column 7 lines 21-56).

Thus, Oniishi discloses that the front electrical control unit converts the control communication signal of the main bus line into a usable signal of the sub-bus line, and transmits

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the control signal received through the main bus line to the drive control unit through the sub-bus line.

However, while Oniishi does disclose the same structure and elements as claim 1, Oniishi only discloses that the data is modified in the drive control unit, and does not explicitly disclose that the protocol has been changed.

Lesesky teaches an invention for data communications associated with a heavy duty vehicle. The apparatus preferably includes at least one electronic subsystem associated with the heavy duty vehicle and a plurality of electrical conductors connected to the at least one electronic subsystem and associated with the heavy duty vehicle. A vehicle data communications protocol converter is preferably connected to the plurality of electrical conductors for converting a first data communications protocol associated with data communications along the plurality of electrical conductors to a second data communications protocol such as an infrared or an RF data communications protocol. The apparatus also preferably includes a transceiver connected to the data communications protocol converter for transmitting the second data communications protocol from the heavy duty vehicle and receiving the data communications protocol from a remote data communications terminal (abstract).

Structurally, Lesesky includes that the data communications apparatus 30 preferably includes at least one electronic subsystem 40 associated with the heavy duty vehicle 20. The at least one electronic subsystem 40, for example, can include an anti-locking brake system ("ABS") 41 connected to the heavy duty vehicle 20. The tractor/trailer combination, however, preferably includes a plurality of electronic subsystems associated with tractor 21 and/or trailer

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25. The electronic subsystems 40 preferably produce data or includes some type of signal generating means, e.g., preferably provided by a signal generator 42 (para 0029).

Thus, from the combined citations of Lesesky above, it is taught how it is known in vehicle data communications for a control unit is configured to convert a communication protocol of the first bus line into a second protocol to be used downstream in a subsystem bus line, and to transmit the control signal received through the first bus line to the drive control unit (contained in the vehicle subsystems, index 45 in figure 1) through the second bus line.

Oniishi has disclosed a base invention which is capable of all functions of the claimed embodiments, including load electrical parts (e.g. lamps and motors in the front of the vehicle), a front electrical control unit, a drive control unit, as well as main and sub-main bus lines. Where Oniishi is deficient, with respect to claim 1 is that Oniishi does not explicitly disclose a protocol conversion taking place in the front electrical control unit. Lesesky, in an invention similar to Oniishi, cures said deficiency in that it is explicitly detailed how communication between vehicle controllers is adapted to convert communication protocols between themselves when in use.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a front electrical controller configured to convert a communication protocol used on one bus line into the protocol of a second bus line in a vehicle front electronic equipment system.

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Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Regarding claim 2, Fig. 3, clearly illustrates the drive control unit of Oniishi is located in an electronic connector.

Drawings and pictures can anticipate claims if they clearly show the structure which is claimed. See MPEP 2125.

Regarding claims 4 and 6, Oniishi, as modified above by Lesesky, teaches that the data communications apparatus 30 also preferably includes a plurality of electrical conductors 38, e.g., preferably provided by twisted pair wiring as understood by those skilled in the art, which are preferably connected to the plurality of electronic subsystems 40 and associated with the heavy duty vehicle 20. The plurality of electrical conductors 38 preferably provide one or more data communications channels or paths for data communications with the electronic subsystems 40, as well as a controller 45 as- described further below herein. As perhaps best illustrated in FIGS. 5 and 11, the data communications apparatus 30 preferably also has vehicle data communications protocol converting means 33, 33', e.g., preferably provided by a vehicle data communications protocol converter as illustrated by first and second data communications protocol converters 37, 39, 37', 39' and a first signal booster 36, 36', connected to the plurality of electrical conductors 38, 38' for converting a first data communications protocol associated with

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data communications along the plurality of electrical conductors 38, 38' to a second data communications protocol. As understood by those skilled in the art, the first data communications protocol is preferably according to SAE J1708, but also could be according to SAE J1939 or RS-485. In other words, the first data communications protocol is preferably an existing data communications protocol conventionally associated with the tractor/trailer combination or the heavy duty vehicle 20. The first data communications protocol converter 37 is preferably an RS-485 transceiver, as understood by those skilled in the art, which transmits and receives data communications according to the J1708 protocol to the plurality of conductors 38 and transmits and receives data communications according to the RS-485 protocol to the second data communications protocol converter 39 and vice-versa (see Lesesky at para 0031).

Regarding claims 7 and 8, Oniishi discloses that the invention relates to a vehicle load control system suitable for use in controlling electric power fed to lamps and motors aboard a vehicle (column 1 lines 5-7). Further, Oniishi discloses that the load drive unit A 20 is also connected to a first group of detecting switches 22.sub.1 -22.sub.n and sensors 23.sub.1 - 23.sub.n mounted on the body of the motorbus. Signals output from these switches and sensors are input to the control section 20b by way of an input interface (I/F) 20f. Battery relays, lighting switches, and switches for detecting the operation of wipers, micro inversions, and the opening of a door can be mentioned as the detecting switches 22.sub.1 -22.sub.n. The control section 20b uses the previously described input signals when controlling the loads 21.sub.1 -21.sub.n. Further, the control section 20b converts the input signals into data and sends the thus converted

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data to the other units, i.e., the SW unit 10 and the load drive unit B 30, by way of the communications interface I/F 20a and the multiplex transmission line 40 (column 7 lines 38-57).

Thus, the invention of Oniishi is clearly capable of operating such load electrical parts as a clearance lamp and a cornering lamp, as well as providing a control signal to the windshield wiper motor.

Regarding claims 9 and 10, Oniishi, as cited above, is clearly drawn to windshield wiper operation, but does not explicitly state that there is a sensor mounted to monitor the washer fluid level. Lesesky is also silent on this exact embodiment, although it is noted that Lesesky adapts the invention for multiple trailer/tractor subsystems including lighting, GPS, component temperature sensing, climate controls, etc. See Lesesky at Tables I and II.

Even though it is not explicitly taught or disclosed in either invention, it would be apparent to one of ordinary skill in the art at the time of the invention that the multiplexing systems of Oniishi and Lesesky, alone or in combination, would clearly render this embodiment obvious since both inventions are drawn toward sensing multiple vehicle control parameters, both programmed or manually activated via switches, and controlling the load distributed to the load electrical parts in response.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD

04 January 2010

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663